molecular interventions
pharmacological perspectives from biology, chemistry and genomics

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DEPARTMENTS

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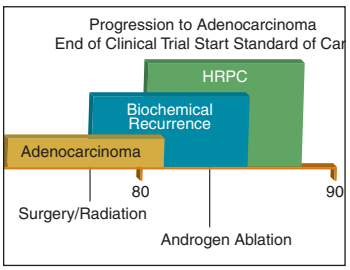
VIEWPOINTS

197 Cancer Vaccines: Indications for Pre-emptive Use?

Tumor cells frequently express antigens that allow them to be specifically targeted and destroyed by the immune system. Many tumor immunotherapy clinical trials have been conducted, directed at several types of cancer using myriad antigens and multiple immunization strategies. Despite this, only one therapeutic cancer vaccine, sipuleucel-T, has been approved. A groundbreaking study by Jaini et al. recently demonstrated that prophylactic immunization against a breast cancer associated antigen can prevent tumor development, and is far more effective than therapeutic vaccination. This study highlights the urgent need to rethink the clinical testing of tumor immunotherapies; it is time to consider clinical trials of cancer vaccines in the prophylactic setting.

Andrew Gray, Lisa Yan, and W. Martin Kast



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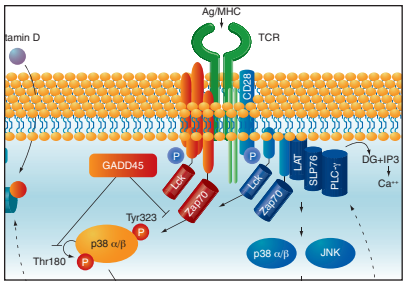
Prophylaxis rather than disease therapy

204 Tweaking the Function of the Vitamin D Receptor to Effect Changes in T-Cell Responses

In addition to its well-known regulatory roles in mineral homeostasis, bone formation, and the endocrine system, the active form of vitamin D exerts a wide range of modulatory functions in the immune response. Vitamin D receptor (VDR) agonists are emerging as prominent candidates for immunotherapy, owing to their immunosuppressive effects on different cell-types of the innate and adaptive branches of the immune system, including antigen presenting cells, T cells, and B cells. Recent work by Geisler and colleagues, however, has uncovered an unexpected stimulatory effect of vitamin D3 on human T cells. In this article, we focus on the mechanistic consequences of these new findings, with particular attention to possible novel therapeutic venues that target the role of VDR in the function of T cells in the immunity of inflammation.

Valentino Parravicini and Stefano Caserta



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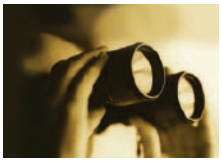
Flipping the switch on effector T cells and inflammation



REVIEWS